RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/733,692A

DATE: 06/26/2001
TIME: 12:56:33

Input Set : **A:\Nih40411.app**
Output Set: **N:\CRF3\06262001\I733692A.raw**

ENTERED

```
 3 <110> APPLICANT: Murphy, Brian R.
 4        Collins, Peter L.
 5        Schmidt, Alexander C.
 6        Durbin, Anna P.
 7        Skiadopoulos, Mario H.
 8        Tao, Tao
10 <120> TITLE OF INVENTION: USE OF RECOMBINANT PARAINFLUENZA VIRUSES (PIVs) AS
11   .    VECTORS TO PROTECT AGAINST INFECTION AND DISEASE CAUSED
12        BY PIV AND OTHER HUMAN PATHOGENS
14 <130> FILE REFERENCE: 15280-404100US
16 <140> CURRENT APPLICATION NUMBER: US/09/733,692A
17 <141> CURRENT FILING DATE: 2000-12-08
19 <150> PRIOR APPLICATION NUMBER: 60/170,195
20 <151> PRIOR FILING DATE: 1999-12-10
22 <160> NUMBER OF SEQ ID NOS: 62
24 <170> SOFTWARE: PatentIn Ver. 2.1
26 <210> SEQ ID NO: 1
27 <211> LENGTH: 42
28 <212> TYPE: DNA
29 <213> ORGANISM: Artificial Sequence
31 <220> FEATURE:
32 <223> OTHER INFORMATION: Description of Artificial Sequence: Sequence of
33        pFLC.PIV32CT, 15474 bp in sense orientation.
35 <400> SEQUENCE: 1
36 cttaagaata tacaaataag aaaaacttag gattaaagag cg                    42
39 <210> SEQ ID NO: 2
40 <211> LENGTH: 36
41 <212> TYPE: DNA
42 <213> ORGANISM: Artificial Sequence
44 <220> FEATURE:
45 <223> OTHER INFORMATION: Description of Artificial Sequence: Flanking
46        sequence of Measles HA gene insert for N-P and P-M
47        junctions
49 <400> SEQUENCE: 2
50 gatccaacaa agaaacgaca ccgaacaaac cttaag                           36
53 <210> SEQ ID NO: 3
54 <211> LENGTH: 101
55 <212> TYPE: DNA
56 <213> ORGANISM: Artificial Sequence
58 <220> FEATURE:
59 <223> OTHER INFORMATION: Description of Artificial Sequence: Flanking
60        sequence of Measles HA gene insert for HN-L
61        junction
63 <400> SEQUENCE: 3
64 aggcctaaaa gggaaatata aaaaacttag gagtaaagtt acgcaatcca actctactca 60
65 tataattgag gaaggacccca atagacaaat ccaaattcga g                   101
68 <210> SEQ ID NO: 4
```

C--> on line 16

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69 <211> LENGTH: 79
70 <212> TYPE: DNA
71 <213> ORGANISM: Artificial Sequence
73 <220> FEATURE:
74 <223> OTHER INFORMATION: Description of Artificial Sequence: Flanking
75       sequence of Measles HA gene insert for HN-L
76       junction
78 <400> SEQUENCE: 4
79 tcataattaa ccataatatg catcaatcta tctataatac aagtatatga taagtaatca 60
80 gcaatcagac aataggcct                                              79
83 <210> SEQ ID NO: 5
84 <211> LENGTH: 64
85 <212> TYPE: DNA
86 <213> ORGANISM: Artificial Sequence
88 <220> FEATURE:
89 <223> OTHER INFORMATION: Description of Artificial Sequence: Cloning site
90       for GU insertion
92 <400> SEQUENCE: 5
93 aggaaaaggg aaatataaaa aacttaggag taaagttacg cgtgttaact tcgaagagct 60
94 ccct                                                             64
97 <210> SEQ ID NO: 6
98 <211> LENGTH: 38
99 <212> TYPE: DNA
100 <213> ORGANISM: Artificial Sequence
102 <220> FEATURE:
103 <223> OTHER INFORMATION: Description of Artificial Sequence: Cloning site
104       for NCR insertion
106 <400> SEQUENCE: 6
107 aggaaaaggg aacgcgtgtt aacttcgaag agctccct                        38
110 <210> SEQ ID NO: 7
111 <211> LENGTH: 63
112 <212> TYPE: DNA
113 <213> ORGANISM: Artificial Sequence
115 <220> FEATURE:
116 <223> OTHER INFORMATION: Description of Artificial Sequence: Cloning site
117       for supernumerary gene insert between the P and M
118       genes of rHPIV3
120 <400> SEQUENCE: 7
121 ttaacaatat acaaataaga aaaacttagg attaaagagc catggcgtac gaagcttacg 60
122 cgt                                                             63
125 <210> SEQ ID NO: 8
126 <211> LENGTH: 12
127 <212> TYPE: DNA
128 <213> ORGANISM: Artificial Sequence
130 <220> FEATURE:
131 <223> OTHER INFORMATION: Description of Artificial Sequence: PIV3 gene end
132       (GE) sequence
134 <400> SEQUENCE: 8
135 aagtaagaaa aa                                                    12
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138 <210> SEQ ID NO: 9
139 <211> LENGTH: 58
140 <212> TYPE: DNA
141 <213> ORGANISM: Artificial Sequence
143 <220> FEATURE:
144 <223> OTHER INFORMATION: Description of Artificial Sequence: Cloning site
145       for RSV G and F gene inserts in B/H PIV3
147 <400> SEQUENCE: 9
148 aggattaaag aactttaccg aaaggtaagg ggaaagaaat cctaagagct tagcgatg    58
151 <210> SEQ ID NO: 10
152 <211> LENGTH: 11
153 <212> TYPE: DNA
154 <213> ORGANISM: Artificial Sequence
156 <220> FEATURE:
157 <223> OTHER INFORMATION: Description of Artificial Sequence: Flanking
158       sequence for RSV G gene insert in B/H PIV3
160 <400> SEQUENCE: 10
161 gcttagcgat g                                                       11
164 <210> SEQ ID NO: 11
165 <211> LENGTH: 15
166 <212> TYPE: DNA
167 <213> ORGANISM: Artificial Sequence
169 <220> FEATURE:
170 <223> OTHER INFORMATION: Description of Artificial Sequence: Flanking
171       sequence of RSV G and F gene inserts in B/H PIV3
173 <400> SEQUENCE: 11
174 aagctagcgc ttagc                                                   15
177 <210> SEQ ID NO: 12
178 <211> LENGTH: 24
179 <212> TYPE: DNA
180 <213> ORGANISM: Artificial Sequence
182 <220> FEATURE:
183 <223> OTHER INFORMATION: Description of Artificial Sequence: Flanking
184       sequence for RSV F gene insert in B/H PIV3
186 <400> SEQUENCE: 12
187 gcttagcaaa aagctagcac aatg                                         24
190 <210> SEQ ID NO: 13
191 <211> LENGTH: 83
192 <212> TYPE: DNA
193 <213> ORGANISM: Artificial Sequence
195 <220> FEATURE:
196 <223> OTHER INFORMATION: Description of Artificial Sequence: Forward primer
197       for PCR of measles HA gene insert for N-P and P-M
198       junctions
200 <400> SEQUENCE: 13
201 ttaatcttaa gaatatacaa ataagaaaaa cttaggatta aagagcgatg tcaccacaac 60
202 gagaccggat aaatgccttc tac                                          83
205 <210> SEQ ID NO: 14
206 <211> LENGTH: 67
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207 <212> TYPE: DNA
208 <213> ORGANISM: Artificial Sequence
210 <220> FEATURE:
211 <223> OTHER INFORMATION: Description of Artificial Sequence: Reverse primer
212   for PCR of measles HA gene insert for N-P and P-M
213   junctions
215 <400> SEQUENCE: 14
216 attattgctt aaggtttgtt cggtgtcgtt tctttgttgg atcctatctg cgattggttc 60
217 catcttc   , 67
220 <210> SEQ ID NO: 15
221 <211> LENGTH: 55
222 <212> TYPE: DNA
223 <213> ORGANISM: Artificial Sequence
225 <220> FEATURE:
226 <223> OTHER INFORMATION: Description of Artificial Sequence: Forward primer
227   for PCR of measles HA gene insert for HN-L
228   junction
230 <400> SEQUENCE: 15
231 gacaataggc ctaaaaggga aatataaaaa acttaggagt aaagttacgc aatcc   55
234 <210> SEQ ID NO: 16
235 <211> LENGTH: 68
236 <212> TYPE: DNA
237 <213> ORGANISM: Artificial Sequence
239 <220> FEATURE:
240 <223> OTHER INFORMATION: Description of Artificial Sequence:
241   Reverse/Forward primer for PCR of measles HA gene
242   insert for HN-L junction
244 <400> SEQUENCE: 16
245 gtagaacgcg tttatccggt ctcgttgtgg tgacatctcg aatttggatt tgtctattgg 60
246 gtccttcc   68
249 <210> SEQ ID NO: 17
250 <211> LENGTH: 28
251 <212> TYPE: DNA
252 <213> ORGANISM: Artificial Sequence
254 <220> FEATURE:
255 <223> OTHER INFORMATION: Description of Artificial Sequence: Reverse primer
256   for PCR of measles HA gene insert for HN-L
257   junction
259 <400> SEQUENCE: 17
260 ccatgtaatt gaatcccCca acactagc   28
263 <210> SEQ ID NO: 18
264 <211> LENGTH: 28
265 <212> TYPE: DNA
266 <213> ORGANISM: Artificial Sequence
268 <220> FEATURE:
269 <223> OTHER INFORMATION: Description of Artificial Sequence:
270   Forward/Reverse primer for PCR of measles HA gene
271   insert for HN-L junction
273 <400> SEQUENCE: 18

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274 cggataaacg cgttctacaa agataacc                              28
277 <210> SEQ ID NO: 19
278 <211> LENGTH: 23
279 <212> TYPE: DNA
280 <213> ORGANISM: Artificial Sequence
282 <220> FEATURE:
283 <223> OTHER INFORMATION: Description of Artificial Sequence: Upstream HPIV2
284       HN primer
286 <400> SEQUENCE: 19
287 gggccatgga agattacagc aat                                   23
290 <210> SEQ ID NO: 20
291 <211> LENGTH: 25
292 <212> TYPE: DNA
293 <213> ORGANISM: Artificial Sequence
295 <220> FEATURE:
296 <223> OTHER INFORMATION: Description of Artificial Sequence: Downstream
297       HPIV2 HN primer
299 <400> SEQUENCE: 20
300 caataagctt aaagcattag ttccc                                 25
303 <210> SEQ ID NO: 21
304 <211> LENGTH: 31
305 <212> TYPE: DNA
306 <213> ORGANISM: Artificial Sequence
308 <220> FEATURE:
309 <223> OTHER INFORMATION: Description of Artificial Sequence: Upstream HPIV2
310       HN primer
312 <400> SEQUENCE: 21
313 gcgatgggcc cgaggaagga cccaatagac a                          31
316 <210> SEQ ID NO: 22
317 <211> LENGTH: 30
318 <212> TYPE: DNA
319 <213> ORGANISM: Artificial Sequence
321 <220> FEATURE:
322 <223> OTHER INFORMATION: Description of Artificial Sequence: Downstream
323       HPIV2 HN primer
325 <400> SEQUENCE: 22
326 cccgggtcct gatttcccga gcacgctttg                            30
329 <210> SEQ ID NO: 23
330 <211> LENGTH: 26
331 <212> TYPE: DNA
332 <213> ORGANISM: Artificial Sequence
334 <220> FEATURE:
335 <223> OTHER INFORMATION: Description of Artificial Sequence: HPIV1 HN
336       primer
338 <400> SEQUENCE: 23
339 agtggctaat tgcattgcat ccacat                                26
342 <210> SEQ ID NO: 24
343 <211> LENGTH: 24
344 <212> TYPE: DNA
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VERIFICATION SUMMARY
PATENT APPLICATION: US/09/733,692A

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L:16 M:270 C: Current Application Number differs, Replaced Current Application Number